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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, the Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat [dot] org.

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

ANS-112 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2024 Apr 21

Nine US Schools Moved Forward in ARISS Selection Process

Amateur Radio on the International Space Station (ARISS) announced on April 18, 2014 the US schools/host organizations newly selected for 2024 ARISS contacts. A total of 9 of the submitted proposals during the recent proposal window have been accepted to move forward in the processes of planning to host a scheduled amateur radio contact with crew on the ISS. The primary goal of the ARISS program is to engage young people in Science, Technology, Engineering, Arts and Math (STEAM) activities and raise their awareness of space communications, radio communications, space exploration, and related areas of study and career possibilities.
[ARISS News]

The ARISS program anticipates that NASA will be able to provide scheduling opportunities for the 9 US host organizations during the July – December 2024 time period. They are now at work starting to implement their 4–6-month education plan which was outlined in their proposal. These STEAM based educational activities help prepare students for their contact as well as create an on-going exploration and interest in aerospace and amateur radio topics. They are also completing an acceptable equipment plan that demonstrates their ability to execute the ham radio contact. Once their equipment plan is approved by ARISS, the final selected schools/organizations will be scheduled as their availability and flexibility match up with the scheduling opportunities offered by NASA.

The schools and host organizations are:

  *   Arizona Science Center, Phoenix, AZ
  *   Bayou Academy, Cleveland, MS
  *   Bishop O’Connell High School, Arlington, VA

  *   Greenville Junior High School, Greenville, IL
  *   Hillsboro Charter Academy, Purcellville, VA
  *   Pacific Science Center, Seattle, WA
  *   Sally Ride Elementary School, Orlando, FL
  *   South Carolina Regional Workforce Advisors-Office of Statewide Workforce Development, Columbia, SC
  *   TEACH-NW Charter School, Springfield, OR

[ANS thanks Dave Jordan, AA4KN, for the above information.]

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The 2024 AMSAT President's Club coins are here now!
Help Support GOLF and Fox Plus

Join the AMSAT President's Club today and help
Keep Amateur Radio in Space!
https://www.amsat.org/join-the-amsat-presidents-club/

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AMSAT Thanks First Quarter 2024 President's Club Members

Frank Karnauskas, N1UW, AMSAT VP – Development happily reports, "Each year for the past four years of its re-incarnation, the AMSAT President's Club has picked up speed and becomes a more important factor in AMSAT's annual fund raising efforts. The first quarter of the 2024 the President's Club is off to a great start. With our regular dedicated contributors plus many first-time members, contributions have already raised almost $16,000 in the first three months of 2024.

"So often, our members think about AMSAT's having to raise funds for satellite hardware – the costs for electronic components, solar panels, batteries and so on. But, there are many background costs. A good example is software licenses needed for actual satellite development. The volunteer engineers can often swap licenses so they can limit the number of licenses needed. But, as they draw closer to finalizing drawings for circuit boards, spaceframes and deployable solar panels, the team can stretch software licenses only so far before work flow becomes handicapped. Some software licenses, even with the best educational or non-profit discounts, easily exceed the $1,000 mark. And, those licenses need to be renewed on an annual basis.

"The engineering team can always use more electrical and mechanical engineers to move the FOX-PLUS and GOLF programs along. But, being able to leverage the efforts of our current volunteers with enough software licenses would be a huge plus. Contributions from members of the President's Club make a big difference in giving the engineering team the tools they need."

To date, the generous donors members of the 2024 AMSAT President's Club include:

  *   Titanium ($4,800+)
Barry Baines, WD4ASW
William Brown, K9LF
  *   Gold ($1,200+)
Anonymous
Burns Fisher, WB1FJ
John Kludt, K7SYS
Glenn Miller, AA5PK
  *   Silver ($600+)
Donald Coker, KM6TRZ
Richard Dittmer, KB7SAT
Mark Johns, K0JM
Joseph, Lynch,N6CL
Bruce Paige, KK5DO
Jason Schwarz, N4JJS
  *   Bronze ($300+)
Donald Pettigrew, K9ECT
Dave Taylor, W8AAS
  *   Core ($120+)

David Batzle, N2VDY
Robert Beatty, WB4SON
Alan Boggs, K7IIV
James Gallagher III, KB3SQS
David Hartrum, WA3YDZ
Steven Husey, KB1UOJ
William Pesci, N4WLP
Paul Stoetzer, N8HM
Stefan Wagener, VE4SW
Wayne Wagner, AG1A

Members can learn more about joining the President's Club at
https://www.amsat.org/join-the-amsat-presidents-club/.

[ANS thanks Frank Karnauskas, N1UW, AMSAT VP – Development for the above information.]

Need new satellite antennas?
Purchase M2 LEO-Packs from the AMSAT Store.
[cid:image003.png(a)01DA9344.2F404010]

When you purchase through AMSAT, a portion of the proceeds goes towards
Keeping Amateur Radio in Space.
https://amsat.org/product-category/hardware/

AMSAT Engineering Team Powering Up for Hamvention

Given hams' inherent interest in all things technical, it's no wonder that the Engineering table at AMSAT's Hamvention booth is always popular. Not wanting to disappoint our members, Jerry Buxton, N0JY, AMSAT VP- Engineering and his team are making plans for an informative and entertaining presence. No fewer than ten members of the engineering team will attending this year's Hamvention.

Probably the most interesting exhibit will be a full-scale model of the GOLF-TEE (Technology Exploration Environment) satellite. The 3-D model printed by team member Tom Karnauskas, N0UW, gives an interesting look at the challenges that satellite designers face when trying to fit stacks of circuit boards, bundles of batteries, attitude sensing and control systems, and experimental payloads inside a 10cm x 10cm x 30cm spaceframe. The model also gives a look at the challenge of adding deployable solar panels to the exterior of the spacecraft. Given the fact that the GOLF program represents AMSAT's return to Highly Elliptical Orbit (HEO), engineers will no-doubt be busy answering questions on all facets of the GOLF program.

Engineers will also be on hand to answer questions about the ongoing development of the Fox-Plus series of satellites. Recognizing the success of the original Fox series as an entry level introduction to amateur satellites, the engineers working the Fox-Plus birds are committed to improving on the original concept and setting the stage for future capabilities for these Low Earth Orbit (LEO) satellites.

For those interested in a look even further into the future, engineers working the ASCENT program will also be present. ASCENT, meaning, Advanced Satellite Communication and Exploration of New Technology, is a "sandbox" for future satellite communications and related systems to be explored and pursued for eventual flight use. A radiation-tolerant internal-housekeeping-unit (RT-IHU), software defined radio (SDR) methods, and a 10 GHz PA design ideas are some ASCENT projects that will fly on GOLF-TEE. Engineers at the table can also discuss other ASCENT projects in the works such as a slow-scan television (SSTV) payload, a packet repeater payload and propulsion systems suitable for CubeSat operation.

[ANS thanks the AMSAT Engineering Team for the above information.]

Want to fly the colors on your own grid expedition?
Get your AMSAT car flag and other neat stuff from our Zazzle store!
[cid:image004.png(a)01DA9344.2F404010]

25% of the purchase price of each product goes towards
Keeping Amateur Radio in Space
https://www.zazzle.com/amsat_gear

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Changes to AMSAT-NA TLE Distribution for April 19, 2024

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. TLE bulletin files are updated daily in the first hour of the UTC day. New bulletin files will be posted immediately after reliable elements become available for new amateur satellites. More information may be found at https://www.amsat.org/keplerian-elements-resources/.

The following satellites have been removed from this week's AMSAT-NA TLE distribution:

  * Clark sat-1 NORAD Cat ID 58613 Decayed from orbit on or about 16 April 2024
  * AISTechSat 3 NORAD Cat ID 44103 Decayed from orbit on or about 18 April 2024

[ANS thanks Joe Fitzgerald, KM1P, AMSAT Orbital Elements Manager, for the above information.]

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ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

Successful Contacts
Mrs Ethelston's CE Primary Academy at Axminster Community Academy Trust, Lyme Regis, United Kingdom, direct via GB4ACA.
The ISS callsign was NA1SS.
The crewmember was Matthew Dominick, KCØTOR.
The ARISS mentor was Ciaran Morgan, M0XTD.
Contact was successful on Wednesday, April 17, 2024 at 10:44 UTC.

Mountain View Elementary, Marietta, GA, direct via KQ4JVI.
The ISS callsign was NA1SS.
The crewmember was Jeanette Epps, KF5QNU.
The ARISS mentor was Daryl Young, K4RGK.
Contact was successful on Thursday, April 18, 2024 at 17:48 UTC.

Upcoming Contacts
American International University, Salmiya, Kuwait, direct via 9K9AIU.
The ISS callsign is presently scheduled to be OR4ISS.
The scheduled crewmember is Mike Barratt KD5MIJ.
The ARISS mentor is Stefan Dombrowski, ON6TI.
Contact is go for Monday, April 22, 2024 at 08:29:15 UTC.

Pleasant Knoll Middle School, Ft. Mill, SC, direct via K4YTZ.
The ISS callsign is presently scheduled to be NA1SS.
The scheduled crewmember is Matthew Dominick, KCØTOR.
The ARISS mentor is Charles Sufanam AJ9N.
Contact is go for Monday, April 22, 2024 at 16:10:29 UTC.
Watch for Livestream at https://www.youtube.com/@YorkCountyAmateurRadioSociety and note that this might change.

Thrive Home School Academy, Colorado Springs, CO, direct via AFØS.
The ISS callsign is presently scheduled to be NA1SS.
The scheduled crewmember is Jeanette Epps, KF5QNU.
The ARISS mentor is Gordon Scannell, KD8COJ.
Contact is go for Monday, April 22, 2024 at 17:42:36.
Watch for Livestream at http://www.hsd2.org/

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down). If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

The packet system is also active (145.825 MHz up & down).

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information.]

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Upcoming Satellite Operations

No operations reported at this time.

A growing number of satellite rovers are currently engaged in sharing their grid square activations on https://hams.at. By visiting the website, you gain easy access to comprehensive information about the operators responsible for activating specific grid squares. Additionally, you have the ability to assess the match score between yourself and a particular rover for a given pass, while also being able to identify the upcoming satellite passes that are accessible from your location.

[ANS thanks Ian Parsons, K5ZM, AMSAT rover page manager, for the above information]

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Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

2024 CubeSat Developer’s Workshop
April 23-25, 2024
Cal Poly, San Luis Obispo, CA
https://www.cubesatdw.org/

Dayton Hamvention 2024
May 17-19, 2024
Greene County Fairgrounds and Expo Center
120 Fairground Road
Xenia, OH 45385
https://hamvention.org

38th Annual Small Satellite Conference
August 3-8, 2024
Logan, UT, USA
https://smallsat.org

[ANS thanks the AMSAT Events page for the above information]

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Satellite Shorts From All Over

* The CubeSat Developers Workshop announced Dr. Puig-Suari will be the keynote speaker for the 2024 event. Dr. Puig-Suari received B.S., M.S., and Ph.D. Degrees in Aeronautics and Astronautics from Purdue University. Dr. Puig-Suari is a professor emeritus in the Aerospace Engineering Department at

Cal Poly, San Luis Obispo. In 1999, Dr Puig-Suari and Prof. Bob Twiggs at Stanford developed the CubeSat standard. Dr. Puig-Suari's team was responsible for the development of the standard CubeSat deployer (the P-POD) and has supported launches for over 130 CubeSats in the U.S. and abroad. More information on the workshop can be found at https://www.cubesatdw.org/. [ANS thanks cubesat.org for the above information.]

* AMSAT-DL has announced planning for the Bochum Space Conference 2024 to be held September 20-22, 2024. AMSAT-DL is organizing a symposium, flea market and general meeting in the radome of the Bochum Observatory. The radome will once again be dedicated to satellite and space research. AMSAT Deutschland e.V. and the Bochum Observatory are taking the positive experience of the anniversary conference in 2023 as an opportunity to inform AMSAT members and other space enthusiasts about current and future prospects for national and international space projects with a varied program. As the Radom is also the location of ESA's education office in Germany (esero Germany), they want to make the symposium even more attractive in future and at the same time focus even more on current European space travel. More information at https://amsat-dl.org/en/bochum-space-conference-2024/. [ANS thanks AMSAT-DL for the above information.]
* Boeing's CST-100 Starliner embarked on its last big road trip before its journey to the International Space Station next month. In the pre-dawn hours of Tuesday morning, the capsule and its service module made the slow trek from Kennedy Space Center to Space Launch Complex 41 on Cape Canaveral Space Force Station. The rollout of the vehicle, named Calypso, is another key step towards the Crew Flight Test (CFT) of the Starliner spacecraft, the first time that it will carry astronauts to and from the ISS. The mission's crew, NASA astronauts Butch Wilmore and Suni Williams, KD5PLB, were on hand to witness the departure of their ticket to ride. [ANS thanks Spaceflight Now for the above information.]
* A dead spacecraft the size of a truck ignites with plasma and pulverizes into dust and litter as it rips through the ionosphere and atmosphere. This is what happens to internet service satellites during re-entry. When the full mega-constellation of satellites is deployed in the 2030s, companies will do this every hour because satellite internet requires thousands of satellites to constantly be replaced. Recent research has led some physicists to believe that the space trash generated by dead and dying commercial satellites could compromise our ionosphere or magnetosphere. Unlike meteorites, which are small and only contain trace amounts of aluminum, these wrecked spacecraft are huge and consist entirely of aluminum and other exotic, highly conductive materials. And highly conductive materials can create charging effects and act as a magnetic shield. [ANS thanks Dr. Sierra Soter, writing in the Guardian, for the above information.]

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat [dot] org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Frank Karnauskas, N1UW
n1uw [at] amsat [dot] org